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ABSTRACT

Reading placements based on teacher judgment, standardized testing, and curriculum-based assessment were compared for 91 elementary students. Results indicated that although correlations among the three placement approaches were high, the congruency of scores from the three approaches was not, ranging from 48% to 69%. The most dramatic evidence of this in the present study was the fact that teacher placements of the fifth grade students was higher than that of fourth grade students even though both the curriculum-based measures and the standardized tests revealed that fourth grade students were functioning higher. Curriculum-based measures agreed best with the other measures. Implications for reading placement decisions are discussed. (Author/GK)

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Research Report No. 56

A COMPARISON OF READING PLACEMENTS BASED ON TEACHER JUDGMENT, STANDARDIZED TESTING, AND CURRICULUM-BASED ASSESSMENT

Lynn S. Fuchs and Stanley L. Deno

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A COMPARISON OF READING PLACEMENTS BASED ON TEACHER JUDGMENT, STANDARDIZED TESTING, AND CURRICULUM-BASED ASSESSMENT

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August, 1981

Abstract

Reading placements based on teacher judgment, standardized testing, and curriculum-based assessment were compared for 91 elementary students. Results indicated that although correlations among the three placement approaches were high, the congruency of scores from the three approaches was not, ranging from 48% to 69%. Curriculum-based measures agreed best with the other measures. Implications for reading placement decisions are discussed.

A Comparison of Reading Placements Based on Teacher Judgment, Standardized Testing, and Curriculum-Based Assessment

Many educators share the belief that accurate student text placement is essential for effective reading instruction (cf. Betts, 1946; McCracken, 1962). In spite of the apparent concern for accurate assessment of reading level, the adequacy of frequently employed placement procedures is questionable (Salvia & Ysseldyke, 1981). To make initial placements, practitioners typically glean information from one of three sources (Fuchs & Fuchs, 1981): (a) group standardized tests that are of questionable value in formulating decisions about individuals (Kelley, 1927; (b) commercial or self-prepared Informal Reading Inventories (IRIs) that often suffer, respectively, from poor content validity (Kaufman, 1976) and poor reliability (Fitzgerald, 1980; Schell, 1979); or (c) previous teachers' reports of placements, the accuracy of which are unknown. As students progress, teachers typically reevaluate initial placements via informal procedures. Sometimes they measure individual performance, but frequently they assess the reading group's average functioning, a procedure that results in individual errors. Given the questionable adequacy of many of the most widely used placement procedures, the accuracy of students' instructional placements appears uncertain.

Investigating the accuracy of instructional placements, Oliver and Arnold (1978) compared teachers' judgments of the instructional levels of 30 randomly selected third graders with the students' performance on the Iowa Test of Basic Skills (ITBS) and with their performance on the Goudy IRI. The correlations between teacher judgments and performance

on the commercial IRI and between teacher judgments and performance on the ITBS were similar (.82 and .74, respectively). Correlated *t* tests revealed that the difference between IRI scores and teacher judgments was statistically significant while the difference between ITBS scores and teacher judgments was not. Therefore, teachers' estimates appeared correct with respect to the standardized tests, but incorrect with respect to the commercial IRIs. Similarly, Arnold and Arnold (1966) compared clinicians' judgments of instructional levels with students' performance on the Gates-MacGinitie Reading Test and on a curriculum-based IRI. Analyses revealed that the mean difference between clinicians' judgments and the Gates score was .5 grade level and the correlation between the two indices was .48. For the IRI-clinician comparison, the mean difference was 1.3 grade levels and the correlation was .22.

The work by Arnold and associates suggests that teacher judgments correlate and agree moderately well with standardized tests, but inadequately with IRIs. However, certain limitations in these studies preclude the formulation of strong conclusions. First, the achievement tests employed have questionable technical adequacy. The Gates-MacGinitie has inadequately constructed norms, questionable validity, and no reported reliabilities; the ITBS has no reported reliabilities (Ysseldyke, 1979). Second, given the small sample sizes employed in the studies, the correlations reported are relatively unreliable statistics (Nunnally, 1967).

In contrast to the findings of the above studies, Botel (1968) found that teacher judgments correlated higher and agreed better with a commercial IRI than with standardized achievement tests. Calculated

on a sample of 539 students, the average correlation between the Botel Reading Inventory (BRI) and teacher judgments was .845; the mean correlation between the standardized tests (either California Reading Test, ITBS, or STEP Tests) and teacher judgments was .706. A congruency analysis performed on 121 students revealed that teacher judgments correctly placed 74.8% of the students with respect to the BRI and 30.0% with respect to the achievement tests. This finding conflicts with those of Arnold and his associates; again, however, the technical adequacy of some of the standardized tests employed in Botel's study is questionable (Ysseldyke, 1979) and this diminishes the strength of any conclusions drawn from the study.

The accuracy of teachers' reading placements remains unclear, and further investigation appears warranted for several reasons. First, the above studies suffer from methodological limitations; second, the findings of these studies conflict; third, teacher placements were replaced with teacher estimates in two of the studies. Finally, commercial inventories, which have norm-referenced standards and are not curriculum-based (Kaufman, 1976), and which are not typically employed in classrooms to make reading placements (Fuchs & Fuchs, 1981), were employed in two of the studies.

Therefore, the purpose of the current study was to investigate the correlations and agreements among scores on curriculum-based measures, scores on technically adequate achievement tests, and teacher judgments of accurate reading instructional placements. This comparison appears useful for both educators and researchers; educators might determine which placement procedure is most accurate and researchers might identify a valid measure to employ as a dependent variable.

Method

Subjects

Subjects were 91 randomly selected children, distributed across grades one through six, in one metropolitan public elementary school. All children were English speaking. Fifteen received special education resource service and 23 were enrolled in Title I programs for children who were "seriously behind" in reading.

Measures

Three types of measures were employed in the study: standardized achievement tests, teacher judgments, and graded reading passages.

Standardized achievement tests. Two tests of the Woodcock Reading Mastery Tests (Woodcock, 1973), the Word Identification (WI) Test and the Passage Comprehension (PC) Test, Form A were employed. The WI Test consists of 150 words ranging in difficulty from preprimer to college level. The preprimer through third grade items were selected from the vocabulary introduced in seven basal reading programs in the first preprimer through the third grade readers (Woodcock, 1973). The more difficult items were drawn primarily from the Thorndike-Lorge List (Thorndike & Lorge, 1944). The subject's task in the WI test is to name words.

The PC Test comprises 85 items of a modified Cloze procedure (Bormuth,.1969). The subject's task is to read silently a passage from which a word has been deleted and to supply verbally to the examiner an appropriate missing word. The passages range in difficulty from first grade to college level (Woodcock, 1973).

Teacher judgments. For each student, teachers reported to the examiner the Ginn 720 (Clymer & Barett, 1976) book level of the reading

group in which the student participated for reading instruction.

Reading passages. Reading passages from the Ginn 720 were employed as measures. For 10 levels in Ginn (see Table 1), two 100 word reading passages were selected. These passages represented the readability level of the material from which they were drawn. Representative passages were employed because of Fitzgerald's (1980) finding, for seven reading series, that there was great variability in the readability of passages within books. The following procedure, adapted from Fuchs and Balow (1974), was employed to select these passages:

(1) From the last 25% of each level, five pages were randomly selected from all pages without phonics exercises or excessive dialogue, indentations, or proper nouns.

(2) For each of these pages, a 100-word passage was identified.

(3) For each passage, a readability score was calculated. The Spache (1953) formula was employed for preprimer through grade three passages. The Dale-Chall (1948) formula was used for grades three through six passages.

(4) The average readability over the five passages was calculated.

(5) If the readability scores of two passages were each within one month grade level of the mean readability score, then these two passages were employed as the measure; if two such passages were not identified, then another passage was randomly selected and steps 2-5 were repeated.

Table 1 displays the publisher's level numbers, publisher's grade levels, and readability information for each selected passage.

Insert Table 1 about here

Procedure

Prior to testing, the classroom teachers completed and returned to the investigators a form on which they indicated the actual level of

placement (ALP) in the Ginn 720 series for each student in the study. In addition, five examiners were trained to administer both the standardized tests and the reading passages.

During a 45 to 60 minute session, each subject was tested individually on all measures, by one randomly determined examiner in one of four quiet and isolated locations within the study school. The WI and PC tests were administered according to directions in the Woodcock Reading Mastery Tests Manual (Woodcock, 1973). The reading passages were administered in a random order, using the following procedure: The examiner found the first passage in a teacher notebook containing all passages, and found the corresponding passage in a student notebook containing all passages. The examiner said to the student, "I'd like you to read aloud some words to me as quickly as you can. If you don't know a word, skip it. Try your hardest. Remember to read very quickly. I'll tell you when to stop. Any questions?". The examiner then exposed the passage to the student and said "Begin" as he/she started a stopwatch. As the student read, the examiner wrote with a transparency pen on acetate that covered the teacher copy. Making sure that his/her writing was hidden from the subject, the examiner crossed out omissions, substitutions, insertions, and mispronunciations, and indicated the last word read with a double slash (//). If the student completed a passage in less than 60 seconds, the examiner noted the number of seconds in which the student read the passage. Otherwise, at the end of 60 seconds, the examiner told the student to stop. For each passage, the examiner repeated the above procedure except for the directions to the student, when the examiner simply said, "Any questions? Ready to read?"

After all testing was completed for a student, the examiner scored each passage by counting words correct and words incorrect. The examiner wrote these scores in the appropriate spaces on a recording form and indicated the number of seconds for those passages that the student had completed in less than 60 seconds. After all information was recorded, the examiner wiped off the acetate covering in order to prepare the teacher notebook for the next subject.

For each of the 10 passages, each student received a words correct per minute score, an errors per minute score, and a percentage correct score. On the basis of these scores, a student was assigned seven instructional level scores. To assign these scores, seven instructional criteria were employed:

(1) Instructional Criterion 1: for preprimer (PP) through grade 3 books, 30-49 words per minute (wpm) with 7 or fewer errors per minute (epm); for grades 4 through 6 books, 50+ wpm with 7 or fewer epm (Starlin & Starlin, 1974).

(2) Instructional Criterion 2: 70+ wpm with 10 or fewer epm (Starlin, 1979).

(3) Instructional Criterion 3: 100+ wpm with 0-2 epm (Haring, Liberty, & White, undated).

(4) Instructional Criterion 4: 95% accuracy (Betts, 1946; Harris, 1961; Powell, 1971).

(5) Instructional Criterion 5: 70+ wpm with 95% accuracy.

(6) Instructional Criterion 6: for PP through grade 2 books, 50+ wpm with 95% accuracy; for grades 3 through 6 books, 70+ wpm with 95% accuracy.

(7) Instructional Criterion 7: for PP through grade 2 books, 50+ wpm with 85% accuracy (Powell, 1971); for grade 3 through grade 6 books, 70+ wpm with 95% accuracy.

For each instructional criterion, a placement score was assigned to each student by finding the highest level at which the criterion was met. However, if two consecutive levels were missed, a higher level

could not be assigned unless the criterion was again met at two consecutive levels.

Criteria 1 through 3 were selected because they are advocated by Precision Teachers (Alper, Nowlin, Lemoine, Perine, & Bettencount, 1973; Deno & Mirkin, 1977; Haughton, 1972; Starlin, 1979; Starlin & Starlin, 1974). Criterion 4 was employed in the study because it is the traditionally accepted IRI, word recognition accuracy criterion for instructional level (Betts, 1946; Harris, 1961; Powell, 1971). Criteria 5, 6, and 7 were created for the study; Criteria 5 and 6 represent combinations of the rate and percentage-accuracy standards found in the first three criteria, while Criterion 7 introduced an 85% accuracy standard for students in preprimer through grade two books. This lower standard of 85% word recognition accuracy was selected because Powell (1971) demonstrated that preprimer through second grade readers maintained 70% comprehension while their word recognition accuracy was at 85% or better. It was hypothesized that, given a less stringent standard, Criterion 7 might differentiate better among beginning readers' placements.

The degree of congruency between the teachers' ALPs and scores on the PC criterion measure was examined by converting each of the seven placement level scores into its corresponding readability score (see Table 1), by converting PC raw scores into Grade Equivalency Scores (GESs), and then by calculating the percentages of students whose teachers' judgments placed them below, above, or at the same levels as their respective PC scores. The degree of congruency between ALPs and WI scores was examined in an analogous fashion.

The degree of congruency between the curriculum-based instructional scores and the PC and WI scores was examined employing a similar procedure. Each of the seven placement scores was converted to its corresponding readability grade score. These readability scores then were compared to GESs on the Woodcock Tests for each student. The percentages of students placed below, above, or the same as the WI and PC tests then were completed.

The degree of congruency between the teacher judgments and the curriculum-based instructional scores also was assessed. The teachers' reported ALPs the curriculum-based instructional levels were compared to determine the percentages of students placed below, above, or at the same level by the teachers. Finally, Pearson Product-Moment correlations among all variables were computed.

Results

Descriptive data concerning the subjects' GESs on the PC and WI tests as well as the readability scores corresponding to their teachers' placements in Ginn are presented in Table 2. Descriptive data on the students' readability scores for their Ginn placements based on the curriculum-based assessment are displayed in Table 3.

Insert Tables 2 and 3 about here

As one can see, the students' average scores increased as grade level increased, except from grade four to five where there was a decrease in average score. This pattern held for every approach to instructional placement except for the teacher judgments. Despite the

dip in the achievement level of fifth graders measured by the achievement and curriculum-based tests, teachers placed the fifth grade students in levels higher than those of the fourth graders.

Comparisons Between Teachers' Instructional Placements and Achievement Test Scores

The percentages of students whose teachers placed them below, above, or the same as the PC and WI grade scores are displayed in Table 4. Teachers placed 53% of their students at the same level, placed 10% above, and placed 37% below the corresponding PC grade scores. Teachers placed 44% of their students at the same level, 28% above, and 27% below the corresponding WI grade scores. Therefore, teacher placements were somewhat more consistent with respect to the PC test. On the average, teachers placed 48% or less than half of their students within one grade level of the Woodcock Reading Mastery Tests. Nevertheless, correlations between teacher placements and GESs of the PC and WI Tests were high, .93 and .91, respectively.

Insert Table 4 about here

Comparisons Between Teacher Instructional Placements and Curriculum-based Instructional Placements

Table 5 displays the percentages of students placed by the teachers below, at, or above the seven curriculum-based placements. In contrast to the other comparisons in this study, the comparison of teacher judgment and curriculum-based measures employed book levels rather than grade levels as its agreement unit. Therefore, to render agreement results comparable across tables, a range of two book levels ($-1 \leq x \leq +1$) or an average of .88 grade levels was "at level" placement in

Table 5. This definition of "at level" placement (within two book levels or .88 grade levels) was somewhat more strict but approximately equaled the definition of "at level" placement (within 1.0 grade levels) employed in Tables 4, 6, and 7.

Insert Table 5 about here

Inspection of Table 5 reveals that with respect to Instructional Criteria 4, 5, 6, and 7, teacher placements were "at level" for over 60% of the students. For those four criteria, an average of 64.5% of students were placed at the same level, 19.5% above, and 15.8% below. With respect to Criterion 2, teachers placed greater percentages above and below. Teachers placed a great percentage (58%) of students above with respect to Criterion 3 and great percentage (48%) of students below with respect to Criterion 1.

Teacher congruence with curriculum-based measurement, then, was higher than with standardized tests (an average of 64.5% vs. 48.0%, respectively). Another perspective can be obtained by examining Table 6. The correlation coefficients between the teacher placements and the curriculum-based assessments ranged from .61 to .89, with all but one of the correlations greater than or equal to .82. Consequently, while teachers appeared to agree better with curriculum-based measures, their placements correlated the same or greater with the standardized achievement test scores than with the curriculum-based measures.

Insert Table 6 about here

Comparisons Between Curriculum-based Instructional Placements and Achievement Test Scores

The degree of congruency between curriculum-based grade scores and achievement test grade scores was examined by computing, for each instructional criterion, the percentages of students whose mastery grade scores were below, at, or above their PC and WI grade scores. Therefore, two combinations of congruency percentages were calculated: instructional grade scores with PC grade scores, and instructional grade scores with WI grade scores (see Tables 7 and 8, respectively).

Insert Tables 7 and 8 about here

The extent of congruency was similar for Criteria 5, 6, and 7 for the WI and PC subtests with an average across the three criteria of 51.3% of students placed at level. Somewhat in contrast to the previous analysis, Criterion 4 placed students above the standardized tests. Criterion 2, on the other hand, presented a pattern similar to 5, 6, and 7, with more balanced percentages for below and above. Criterion 3, however, placed a greater percentage of students below. By comparison, Criterion 1 tended to place students above (averages of 12.5% placed below, 49.0% placed above). When Criterion 7 was used, curriculum-based assessment procedures placed approximately 57% of the subjects at level in this study. The correlations between the curriculum-based measures and the achievement tests (see Table 6) ranged from .62 to .95, with all but two of the correlations greater than or equal to .88.

Discussion

The correlations among all three placement approaches (teacher

judgments of instructional level, curriculum-based measures, and achievement tests) were high, indicating criterion validity (Nunnally, 1959) and specifying good predictive efficiency (Messick, 1980) among the measures. On this basis, one can assume that (a) each of the placement procedures demonstrates the validity of and represents the same constructs as the other measures, and (b) each placement measure renders similar information on students' standings relative to normative populations.

Expressed more concretely, the strong correlations indicate that the rank orders of the students on the three measures are similar. However, as pointed out by Bradley (1977) and as corroborated in this study, it is possible for measures to correlate well but agree poorly. Perhaps the most dramatic evidence of this in the present study was the fact that teacher placements of the fifth grade students was higher than that of fourth grade students even though both the curriculum-based measures and the standardized tests revealed that fourth grade students were functioning higher. Therefore, despite the strong correlations reported here, congruency analysis revealed that teachers' placements agreed with achievement test scores for an average of only 48% of students. Using the best estimate, teacher placements agreed with curriculum-based measures for 69% of students. Given the pedagogical assumption that accurate text placement is essential to effective reading instruction, one might legitimately be concerned about the inaccuracy of teachers' reading placements.

This concern is tempered, however, by the lack of agreement between curriculum-based measures and achievement tests demonstrated in this

study. Given the best estimate, achievement test scores and curriculum-based placement scores agreed for 58% of students. This lack of agreement renders it impossible to determine which one of the three placement approaches, if any, accurately places students, and leads the researcher to wonder whether a good criterion measure of reading placement or achievement exists.

One possible resolution to the problem lies in the fact that the curriculum-based tests used in this study were designed to be employed frequently (Fuchs, 1981), a procedure wherein a student's score is reported in terms of central tendency measures calculated over repeated samples. This procedure reduces measurement error and improves the reliability of scores (Fuchs, 1981). Implemented in this way, the accuracy of the curriculum-based tests' placement scores may improve, and these measures may represent an acceptable placement procedure. Even without the benefit of repeated measurement, curriculum-based measures agreed best with the other measures employed in this study, and may provide the best research criterion measure and reading placement approach currently available.

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Table 1

Ginn 720 Level Numbers, Grade Levels, and Readability Information

Level Number	Grade Levels	Readability Across Passage	N[a]	SD[b]	Readability of Two Selected Passages
3-4	PP-P	2.02	8	.098	2.01
5	1	2.21	5	.117	2.20
6	2-1	2.43	6	.196	2.43
7	2-2	3.17	13	.536	3.10
8	3-1	3.60	10	.468	3.66
9	3-2	4.11	6	.142	4.05
10	4	5.00	11	.476	5.00
11	5	5.38	10	.534	5.36
12	6	5.81	14	.392	5.75
13	7	6.00	13	.593	6.03

[a]Number of passages employed.

[b]Standard deviation of readability scores across passages.

Table 2

Subjects' Grade Equivalency Scores on the Passage Comprehension Test (PC) and Word Identification Test (WI) and Ginn Placements[a]

Grade Level	N	PC $\bar{X}$	PC SD	WI $\bar{X}$	WI SD	Ginn Placement Readability Score
1	14	1.32	1.45	1.41	1.50	1.01
2	16	2.35	2.20	2.00	1.82	2.34
3	15	3.20	2.30	2.90	1.80	3.52
4	17	4.12	2.10	3.70	1.70	4.43
5	16	3.91	2.20	3.30	1.70	5.08
6	11	7.40	1.72	7.40	1.40	6.58

[a]Ginn placements were judged by teachers.

Table 3

Readability Scores Corresponding to Subjects' Ginn Placements as Assessed by the Curriculum-based Measures

Grade Level	N	Instructional Criteria						
		1	2	3	4	5	6	7
1	14	2.05	2.02	2.02	2.02	2.02	2.02	2.05
2	17	3.92	2.65	2.19	2.76	2.35	2.51	2.72
3	15	5.43	4.18	2.29	4.11	3.91	3.71	3.68
4	18	5.83	5.05	3.27	4.82	4.48	4.58	5.01
5	16	5.56	4.82	2.35	3.93	3.84	3.89	4.13
6	11	6.38	6.08	4.02	5.98	6.18	6.18	6.18

Table 4

Percentages of Students Placed by Teachers At, Above, and Below Scores on Passage Comprehension (PC) and Word Identification (WI) Tests (N=89)[a]

Achievement Test	Teacher Placement Compared to Achievement Test		
	Below	Same	Above
PC	37	53	10
WI	27	44	28

[a]No placement was reported for two students.

Table 5

Percentages of Teachers' Placements At, Above, and Below the Curriculum-based Instructional Levels for Each Instructional Criterion (N=89)[a]

Instructional Criterion	Teacher Placement Compared to Curriculum-based Levels		
	Below	Same	Above
7	16	69	15
6	14	65	19
5	15	63	23
4	18	61	21
3	3	39	58
2	29	53	18
1	50	47	3

[a]No placement was reported for two students.

Table 6

Correlation Among Teacher Placements, and PC and WI Raw Scores, and Curriculum-based Instructional Placements (N=91)[a]

	Curriculum-based Instructional Placements						
	1	2	3	4	5	6	7
Teacher Placements	.87	.86	.61	.82	.86	.87	.89
PC	.93	.92	.66	.88	.90	.91	.93
WI	.95	.89	.62	.88	.88	.89	.91

[a]All correlations are statistically significant ($p < .001$).

Table 7

For Each Instructional Criterion, the Percentages of Students Placed At, Above, and Below the Passage Comprehension (PC) Score (N=89)[a]

Instructional Criterion	Curriculum-based Placement Compared to PC Score		
	Below	Same	Above
7	32	59	9
6	42	49	9
5	45	44	11
4	49	35	16
3	68	32	0
2	26	47	27
1	14	42	34

[a]No placement was reported for two students.

Table 8

For Each Instructional Criterion, the Percentages of Students Placed At, Above, and Below the Word Identification (WI) Score (N=89)[a]

Instructional Criterion	Curriculum-based Placement Compared to WI Score		
	Below	Same	Above
7	27	55	18
6	38	53	10
5	38	50	11
4	29	46	25
3	64	35	0
2	29	44	27
1	12	36	52

[a]No placement was reported for two students.

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